Innovative and compact designs with 50 to 120 individual circuit chilling tons and the ability to parallel up to five circuits.

www.sterlco.com
Trident™ Solutions Tailored for Your Process.

Applications and processes are as unique as the products they produce. The Trident™ GS Series Central Chiller has a variety of options available to adapt the unit to your individual needs.

**Shell & Tube Evaporator**
Designed for continuous operation in high particulate water applications.

**Alarm Package**
Integrate audible/visual warning and fault indicators for your chilling system.

**Sensor Arrays**
Various configurations of sensors for complete unit and system control.

**Communications**
From Modbus, BACnet, to web enabled control, choose the right communication option for your installation.

**Water Manifolds**
Evaporator and condenser manifold sets for complete unit connectivity.

**H³ Display**
Removable chiller HMI with LCD display and magnetic backing.

**Evolution Display**
Connect directly to the chiller controls for direct programming.

**Extended Warranty**
Additional 4 years of compressor warranty protection.
Trident™ Solutions Tailored for Your Process.

The Trident™ GS Series Modular Central Chiller integrates advanced technologies with proven component design to offer a capable and innovative process chilling solution.

The state-of-the-art controls provide the operator with intuitive command structures while offering critical unit performance data in understandable dashboard sets. Individual circuit capabilities range from 50 tons to 120 tons of cooling capacity. Each circuit has the ability to parallel with other Trident™ circuits of the same size for maximum system scalability. Drone circuits offer market leading connectivity, as every unit has the same control set. This allows the Trident™ to offer the ultimate plug and play capability available. In addition to scaling the number of circuits, to a maximum of five, the product also offers one-button integration with Sterling pump tanks.

Reliable and versatile chilling technology to meet the needs of today’s complex processes.

1. Compact Size: The Trident™ provides maximum chilling capacity in a space-saving package.

2. Robust Capability: Intuitive controls allow for simple operation and straightforward scalability.

3. Innovative Technology: Maximizing efficiencies through intelligent design, advanced connectivity controls, and virtually effortless maintenance.

Applications
The GS series of central chillers can be used in any application that needs a constant source of cool process fluid. Typical applications include, but are not limited to, the following:
- Injection molding
- Blow molding
- Extrusion
- Thermoforming
- Machine tool
- Metal plating
- Thermal spray
- Laser
- After-coolers (air compressors, dryers, etc.)
- Printing (offset, gravure, digital)
The Trident™ product offering has been developed with the future growth of your application in mind. As facility needs change, additional units can be paralleled to reach desired cooling requirements. In a master/drone configuration, a total of five units can be paralleled to provide up to 600 tons of chilling capacity. Each circuit is controlled on the master unit’s Trident™ advanced operator panel while the user has the ability to review the specifics of the performance for each circuit. This capability allows for the right-sizing of cooling circuits in the present, minimizing expense and maximizing current profitability.

**Maximum Uptime**
To maximize system uptime, a master/drone circuit configuration provides inherent redundancy. In the event an individual circuit needs to be placed offline, the system will adjust and continue to operate as needed. If it is the master unit that requires maintenance, any drone circuit can be quickly programmed to be the master so the system remains functional.

Integrated directly into the evaporator, TS Tech™, allows for rapid tool-less access to the strainer for cleaning. Replaceable refrigerant filter dryers are easily accessible, allowing for rapid changes and limited downtime. Standard brazed-plate evaporators include back-flushing ports to quickly clean evaporator channels, ensuring continuous efficient operation of the chiller as a whole.

**Intelligent Usage**
The Trident™ GS Series Central Chiller utilizes a multitude of intelligent functions to allow users to efficiently and effectively manage their cooling system. Operators are able to select cooling by the chilled fluid out temperature, the chilled fluid in temperature, or even through an optional remote process sensor. Each circuit employs all of the standard sensor arrays to ensure proper functionality while the master unit ensures even run time between individual compressors. While air-cooled units utilize variable frequency drives to manage condenser fans, water-cooled units employ water-regulating valves to reduce energy consumption as process needs allow. The electronic expansion valve, EEV, intelligently manages the flow of refrigerant through the evaporator and the chiller to ensure efficient operation of the system.

**Infinite Slide Valve Control**
The advantage of a screw compressor design is the ability of the unit to unload without the use of a hot gas bypass. The compressor is able to run at lower loads, while avoiding unit cycling.

**Robust, Easy-to-use Touch Screen.**
Each circuit provides real-time sensor data to help gauge system performance. Convenient graphs of each circuit provide overall performance trends. Component view shows flow parameters on each circuit, divided by component regions.
**Integrated Compressor Technologies**

The Trident™ GS Series Central Chiller takes full advantage of integrated features of the highly reliable screw compressor. A significant advantage of the screw compressor design is the ability to operate at lower process loads, virtually eliminating unit cycling. To protect itself from increased current draws, the winding temperature is actively monitored to avoid motor failure. The Trident™ compressor automatically shuts down in the case of phase reversal, protecting the unit from backwards operation and potential catastrophic failure. At the same time, should the facility lose a phase, the unit will again shut down to protect the compressor from damage. Should the process encounter an issue causing increased refrigerant pressure within the compressor, an integrated high pressure safety will activate, shutting the compressor down.

**Connectivity**

The Trident™ offers remote access to the advanced operator panel through Wi-Fi to a computer, tablet, or smartphone. Plant Managers can monitor the machine from anywhere.

**Flexible Usage and Administration**

The Trident™ GS Series Chiller controls feature intuitive control options to actively manage and monitor your process cooling application. Master control units are offered with an advanced operator panel, where multiple levels of access can be granted to operators, supervisors, and technicians.

**Advanced Monitoring and Reporting**

The display features advanced monitoring of each individual circuit and a wide range of parameters including: Chill in/out temperature, suction and discharge pressure, evaporator and condenser temperature as well as overall system flow. In addition, the display can generate usage graphs and other helpful reporting features. In addition, the display allows users to monitor the operation of the VFD and the EEV, verifying the energy efficiency of the system. Superheat and subcool temperatures are also prominent on the operator panel, ensuring efficient chiller operation.

**Fault and Warning Data**

Up to 50 alarms are stored within the unit, recording all of the relevant data at the time of the event. This allows for better system and unit diagnosis and a faster time to resolution. By recording the time of the event, corresponding facility activities or events can be traced and faults can be corrected.

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**Easy-to-read current operating conditions.**

**Wide array of options including default units of measurement and user configuration.**

**Comprehensive alarm history includes time/date stamp for accurate situational diagnostics.**

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**TRIDENT™ GS SERIES | www.sterlco.com 4**
Configurations

Air-cooled Units

The Remote Condensers provided with the air-cooled Trident™ Chillers offer a compact solution in a sleek design. The highly efficient condenser sections are as attractive as they are functional. The compact design is an excellent addition to any facility with remote condenser needs.

Condenser fans are controlled by variable frequency drives for maximum head pressure control and superior energy efficiency. Besides being robust, these remote condensers are rated down to -20°F ambient.

Water-cooled Units

Water-cooled configurations are an excellent option for facilities with existing process cooling water supplies. These chiller models have a more efficient operation leading to increased operating capacity.

Reduce Service Downtime with TS Tech.™

The tool-less strainer technology significantly reduces service time by providing easy access to the strainer.

Fast service and maintenance of the High Efficiency Central Chiller is paramount to an efficient operation. Traditional chilling systems require an externally mounted strainer involving draining the system and multiple tools for cleaning. The High Efficiency Central Chiller incorporates a debris strainer equipped with TS Tech™ tool-less strainer which has significantly more surface area to increase the time between required cleanings. When necessary, cleaning the system is simple for service personnel with the ability to isolate the evaporator and only drain a small section instead of the entire system. Traditional models require cutting out of the existing filter and brazing in a new unit. No tools are required to remove the strainer which reduces service labor hours and increases uptime.

Tech Tip: To maximize system uptime, we recommend purchasing an additional strainer for quicker replacement.

TS Tech™ features a much larger strainer surface, improving performance and reducing time between cleaning.
TRIDENT™ GS Series (Water-cooled)

<table>
<thead>
<tr>
<th>Model</th>
<th>Cooling Capacity Tons @ 50˚ LFT (Kw)</th>
<th>Minimum Load Tons (Kw)</th>
<th>Condenser Water Flow GPM (LPM)</th>
<th>Power</th>
<th>Dimensions in Inches (CM)</th>
<th>Shipping Wt. Lbs (Kg)</th>
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</thead>
<tbody>
<tr>
<td>GSWC175</td>
<td>51.2 (180)</td>
<td>19.9 (70)</td>
<td>153 (579)</td>
<td>92</td>
<td>165</td>
<td>79.0 (201)</td>
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<td>GSWC210</td>
<td>61.7 (217)</td>
<td>23.8 (84)</td>
<td>187 (708)</td>
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<td>181</td>
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<tr>
<td>GSWC245</td>
<td>68.3 (240)</td>
<td>28.7 (101)</td>
<td>213 (806)</td>
<td>123</td>
<td>222</td>
<td>79.0 (201)</td>
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<tr>
<td>GSWC280</td>
<td>77.9 (274)</td>
<td>30.8 (108)</td>
<td>242 (916)</td>
<td>133</td>
<td>239</td>
<td>79.0 (201)</td>
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<tr>
<td>GSWC350</td>
<td>100.0 (352)</td>
<td>30.9 (109)</td>
<td>304 (1151)</td>
<td>131</td>
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<td>79.0 (201)</td>
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<tr>
<td>GSWC420</td>
<td>120.4 (423)</td>
<td>42.2 (148)</td>
<td>375 (1420)</td>
<td>183</td>
<td>328</td>
<td>79.0 (201)</td>
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</tbody>
</table>

* For additional capacities at multiple LFTs, refer to the product Operation and Installation manual
* Stated capacity data assumes GS; F ambient w/ 2.4 GPM/Ton flow, ± 5% component variance
* Shipping weight does not include packaging materials, such as pallets, cardboard, etc.

TRIDENT™ GS Series (Air-cooled)

<table>
<thead>
<tr>
<th>Model</th>
<th>Cooling Capacity Tons @ 50˚ LFT (Kw)</th>
<th>Minimum Load Tons (Kw)</th>
<th>Condenser Water Flow GPM (LPM)</th>
<th>Power</th>
<th>Dimensions in Inches (CM)</th>
<th>Shipping Wt. Lbs (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSRC175</td>
<td>46.6 (164)</td>
<td>13.7 (48)</td>
<td>122</td>
<td>210</td>
<td>79.0 (201)</td>
<td>36.0 (92)</td>
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<tr>
<td>GSRC210</td>
<td>54.9 (193)</td>
<td>15.7 (55)</td>
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<td>235</td>
<td>79.0 (201)</td>
<td>36.0 (92)</td>
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<tr>
<td>GSRC245</td>
<td>62.5 (220)</td>
<td>18.9 (66)</td>
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<td>36.0 (92)</td>
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<tr>
<td>GSRC280</td>
<td>70.2 (247)</td>
<td>21.5 (76)</td>
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<td>246</td>
<td>79.0 (201)</td>
<td>36.0 (92)</td>
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<td>GSRC350</td>
<td>90.0 (317)</td>
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<td>36.0 (92)</td>
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<tr>
<td>GSRC420</td>
<td>111.2 (391)</td>
<td>34.9 (123)</td>
<td>225</td>
<td>382</td>
<td>79.0 (201)</td>
<td>36.0 (92)</td>
</tr>
</tbody>
</table>

* For additional capacities at multiple LFTs, refer to the product Operation and Installation manual
* Stated capacity data assumes GS; F ambient w/ 2.4 GPM/Ton flow, ± 5% component variance
* Shipping weight does not include packaging materials, such as pallets, cardboard, etc.

Remote Condenser

<table>
<thead>
<tr>
<th>Model</th>
<th>Nominal Capacity Tons (Kw)</th>
<th>Number of Fans</th>
<th>Total CFM</th>
<th>Dimensions in Inches (CM)</th>
<th>Shipping Wt. Lbs (Kg)</th>
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</thead>
<tbody>
<tr>
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<td>50 (175)</td>
<td>4</td>
<td>37,000</td>
<td>49.1 (124.8)</td>
<td>45.5 (115.6)</td>
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<td>60 (210)</td>
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<td>48,300</td>
<td>49.1 (124.8)</td>
<td>45.5 (115.6)</td>
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<td>70 (245)</td>
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<td>54,400</td>
<td>49.1 (124.8)</td>
<td>45.5 (115.6)</td>
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<tr>
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<td>80 (280)</td>
<td>8</td>
<td>77,200</td>
<td>49.1 (124.8)</td>
<td>88 (223.5)</td>
</tr>
<tr>
<td>GSRC420</td>
<td>120 (420)</td>
<td>10</td>
<td>96,500</td>
<td>49.1 (124.8)</td>
<td>88 (223.5)</td>
</tr>
</tbody>
</table>

* Remote condensers requiring more than 5 zones are shipped as two separate units
* Shipping weight does not include packaging materials, such as pallets, cardboard, etc.

Optional Features.

Shell and Tube Evaporator

Trident™ GS Series Chillers offer shell and tube evaporators as an option across all sizes. These large evaporator designs are ideal for applications that have a higher fluid contaminant level. The wider channels within the shell and tube design are better able to tolerate particles within the transfer fluid. Although the standard brazed plate evaporators include built in safeties to avoid freeze issues, some applications may be better suited for the shell and tube option.

Alarm Package

An optional top-mounted alarm system provides both audible and visual indication in the event that the Trident™ GS Series Chiller needs attention. The amber warning light alerts an operator to a potential issue while the unit continues to operate, while the red fault strobe alerts an operator to a unit shut down. The audible portion of the alarm can be configured for different decibel levels to meet the needs of your facility.

Communications

From Modbus to BACnet, the Trident™ Chiller can be set up to meet the communication needs of your facility. Integrated TCP/IP addressing allows for the unit to connect directly to your network. As long as the unit is connected, control of the advanced operator panel can be managed from a wireless device such as a tablet. The same controls found on the panel itself are available directly on a smartphone or tablet.

Water Manifolds

Manifold assemblies are available for both condensers and evaporators on water-cooled units, and evaporators only on air-cooled units. They may be shipped as separate components, or when purchasing a two unit system, PVC manifolds can be manufactured with the units for a complete assembly shipment.
Get More From Your Production Floor

Count on Sterling to bring you all the technologies you need to advance uptime, energy efficiency and performance in your operation. Turn to our technical support team to evaluate your expected system loads and load characteristics, energy and climate-related issues as well as incorporating new equipment with plastics industry equipment you already own.

Sterling History

Sterling has been an innovator in the industry for over 100 years. Mold temperature control units continue to be called “Sterlcos” because when you bring such an important product to market, the name sticks. Sterling brings a reputation of quality and unmatched reliability. As the industry leader, Sterling provides the largest line of process heating and cooling TCU’s, chillers, and cooling systems. Sterling supplies innovative solutions to a wide range of process industries, and has grown to be a leader in blending, drying, conveying, and size reduction equipment.

Aftermarket Service & Support

Sterling has a service network across the United States and in several key international locations. We are focused on having the right people and products in the right places to keep our customers running efficiently. Whether you need On-Site Service, Technical Support & Training, Parts Support or even Product Repair & Refurbishment, we have you covered. Contact our team today for all of your aftermarket needs at 262-641-8600 or service@acscorporate.com.

About ACS Group

The ACS Group designs, manufactures, markets and supports one of the most comprehensive lines of auxiliary products for the plastics processing industry. Over the years, ACS Group has grown both organically through technical innovation and through acquisition. ACS Group offers an expansive product line, which includes size reduction equipment (granulators and shredders), material conveying equipment, metering and blending devices, heat exchangers (mold temperature controls units and chillers), drying systems, and hydraulic presses.